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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,878

04/28/2005

Takehiko Fujita

033082R251

9324

441 7590 03/31/2009

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EXAMINER

KACKAR, RAM N

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

03/31/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,878	FUJITA ET AL.	
	Examiner	Art Unit	
	Ram N. Kackar	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-7 and 9-12 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (JP 2001144019) in view of Suzuki et al (US 2002-0014483).**

Suzuki et al (JP 2001144019) disclose a thermal processing unit comprising a holder for plurality of substrates (Fig 1-23), reaction container (2), process gas supplying mechanism (41,42,43,44,45 and 46), heating mechanism (31-36) and a controller which controls each gas circuit and each heating mechanism independently from each other according to a recipe which controls gas flows and heating power. Suzuki further teaches that a recipe for a certain process rate is modified depending upon the number of substrates in the batch so that dummy wafers may not be needed to fill empty slots. It is obvious that the determination of recipe modification depends upon previous experimentation.

It is obvious that modified processing parameters for a given number of substrates as above would provide desired processing result only when the processing conditions are similar to the ones which existed when the model was generated.

Regarding the limitation “an arrangement table-data storing part that stores arrangement table-data associating the number-data of the substrates to be processed by one batch-process

with arrangement-data of the substrates on the holder is provided, and the controlling unit is adapted to obtain arrangement- data, depending on the actual number of the substrates to be processed by one batch-process, based on the arrangement table-data stored in the arrangement table-data storing part, and to cause the holder to hold the substrates according to the obtained arrangement-data”, this appears to requires that the substrates are loaded in the processing chamber according to predetermined arrangement.

Suzuki et al (US 2002-0014483) disclose that temperature set points for spatially arranged heaters depend upon the arrangement of substrates in order to get uniform process results (See for example Abstract, Fig 3, Paragraph 18-19, 61-65, 83, 86 and 100).

Recent amendment adds the limitation “wherein the controlling unit further obtains a temperature target value for a central substrate among a plurality of substrates in each batch of said plurality of batch-processes as well as other temperature target values for upper and lower positioned substrates for at least some of said plurality of batch-processes, and wherein the obtained temperature value for the central substrate is not changed in value relative to the plurality of batch-processes, but other temperature target values among the upper and lower positioned substrates are changed in value from batch to batch among the batch processes in order to make more uniform the film-forming speed”.

It is noted that modifications to target temperature would depend upon all other parameters, including gas flow, number of substrates and their arrangement in the holder.

Suzuki et al (US 2002-0014483) teach that temperature modification could adjust for changes in flow rate caused by changes in batch size and arrangement according to estimating model as discussed in Para 18 and 19. Therefore amount of change will be predicated upon those

parameters. Suzuki et al (JP 2001144019) disclose that some temperature parameters may change while others may not (Para 25).

Therefore having substrate arrangement as process parameter for variable number of substrates would have been obvious for one of ordinary skill in the art.

Response to Arguments

Applicant's arguments filed 12/15/2008 have been fully considered but they are not persuasive.

Applicant's arguments regarding the new limitations are noted. The cited references however teach adjustment of target temperature according to batch size, arrangement of substrates and gas flow parameters. Actual change for certain substrates would be governed by the implementation of models and may result is some parameters change and others not change. Actual change is as a result of use of the controller and does not point to apparatus it self. It is certainly possible to keep the temperature of the central substrate unchanged by compensating it with gas flow while making changes to upper and lower changes to compensate for the fixation of temperature for the central substrate.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Ram N Kackar/
Primary Examiner, Art Unit 1792